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J1046 U.S. PTO  
10/021850  
12/13/01

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PATENT TRADEMARK OFFICE

Docket No.: 3153/1F570 US3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Stephen QUAKE and Wayne D. VOLKMUTH

Serial No.:

10/021850  
~~To be assigned~~

Group Art Unit:

1743  
~~Not yet assigned~~

Filed:

12-13-01  
~~Concurrently Herewith~~

Examiner:

Stevens  
~~Not yet assigned~~

For:

METHOD FOR ANALYSIS AND SORTING OF POLYNUCLEOTIDES

INFORMATION DISCLOSURE STATEMENT

Hon. Commissioner of  
Patents and Trademarks  
Washington, DC 20231

Sir:

In order to comply with the duty to disclose information under 37

C.F.R. § 1.56, Applicants submit herewith an Information Disclosure Statement in accordance with 37 CFR §§ 1.97 and 1.98. In particular, Applicants submit herewith a Form PTO-1449 listing references for consideration by the Examiner.

This application is a continuation of U.S. Patent Application Serial No. 09/499,943 filed on February 8, 2000 (hereinafter referred to as "the '943 application"). To avoid overburdening the Examiner, copies of the references cited in the accompanying Form PTO-1449 are not submitted herewith as the reference are already of record in the '943 application. However, copies of the references will be provided at the Examiner's request.

It is believed that no fee is required for this submission. However, should the U.S. Patent and Trademark Office determine that any fee is required or that any refund is due for this application, the Commissioner is authorized and requested to charge any required fee(s) and/or credit any refund(s) due to Deposit Account No. 04-0100.

In accordance with MPEP Sections 609 and 707.05(b), Applicants are filing this Information Disclosure Statement to disclose information that was cited or submitted to the Patent Office in the '943 application so that the listed information will be printed on the patent. It is requested that each document cited (including any reference or other document cited in applicant's specification which is not repeated on the attached Form PTO-1449) be given thorough consideration by the Examiner, and that it be cited of record in the prosecution history of the present application by initialing Form PTO-1449 next to the document. Such initialing is requested even if the Examiner does not consider a cited document to be sufficiently pertinent to use in a rejection, or otherwise does not consider it to

Serial No. To be assigned

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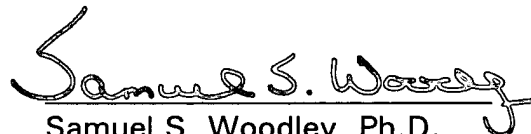
be prior art for any reason. This is requested so that each document becomes listed on the face of the patent issuing on the present application.

The present Information Disclosure Statement is being submitted in compliance with 37 CFR 1.56, but the citation of such document is not to be construed as an admission that such document is necessarily relevant or prior art. No representation is intended that the cited documents represent the results of a complete search, and it is anticipated that the Examiner, in the normal course of examination, will make an independent search and will determine the best prior art consistent with 37 CFR 1.104(a) and 1.106(b) and, in the course of each search, will review for relevance every document cited on the attached form even if not initialed.

Early and favorable consideration is earnestly solicited.

Respectfully submitted,

Dated: December 13, 2001



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**LIST OF REFERENCES CITED BY APPLICANT**

(Use Several Sheets if Necessary)

DOCKET NO.: 3153/1F570-US3

APPLICANTS: Stephen QUAKE and Wayne D. VOLKMUTH

SERIAL NO: To be assigned

FILING DATE: Concurrently Herewith

TITLE: METHOD FOR ANALYSIS AND SORTING OF POLYNUCLEOTIDES



**U.S. PATENT DOCUMENTS**

<u>*EXAMINER INITIALS</u>	<u>DOCUMENT NUMBER</u>	<u>DATE</u>	<u>NAME</u>	<u>CLASS</u>	<u>SUBCLASS</u>	<u>FILING DATE</u>
	1.	5,726,404	3/10/98	Brody	200 81	5/31/96
	2.	5,512,131	4/30/96	Kumar et al.	156 655.1	10/4/93
	3.	5,558,998	9/24/96	Hammond et al.	435 6	6/5/95
	4.	5,856,174	1/5/99	Lipshutz et al.	435 286.5	1/19/96
	5.	5,922,591	7/13/99	Anderson et al.	435 287.2	6/27/96
	6.	5,932,100	08/03/99	Yager et al.	210 634	6/14/96
	7.	5,661,222	08/26/97	Hare	525 478	4/13/95
	8.	5,454,472	10/03/95	Benecke et al.	209 127.1	8/19/92
	9.	5,452,878	09/26/95	Gravensen et al.	251 129.02	6/17/92
	10.	5,417,235	05/23/95	Wise et al.	137 1	7/28/93
	11.	5,304,487	04/19/94	Wilding et al.	435 291	5/1/92
	12.	4,585,209	04/29/86	Aine, et al.	251 129.02	10/27/83
	13.	4,581,624	04/08/86	O'Connor	357 26	3/1/84
	14.	5,271,724	12/21/93	van Lintel	417 413	8/21/91
	15.	2,656,508	10/20/53	Coulter	324 71	8/27/49
	16.	5,852,495	12/22/98	Parce	356 344	09/30/97
	17.	4,908,112	03/13/90	Pace	204 299	6/16/88
	18.	5,750,015	03/12/98	Soane et al.	204 454	3/13/96
	19.	5,726,751	03/10/98	Altendorf et al.	356 246	3/10/98
	20.	5,885,470	03/23/99	Parce et al.	216 33	4/14/97
	21.	5,800,690	09/01/98	Chow et al.	204 451	7/3/96
	22.	5,702,618	12/30/97	Saaski et al.	216 2	5/19/95
	23.	5,637,469	06/10/97	Wilding et al.	435 7.21	11/30/94
	24.	5,304,487	04/19/94	Wilding et al.	435 291	5/1/92
	25.	5,164,598	11/17/92	Hillman et al.	250 341	2/5/91
	26.	5,126,022	06/30/92	Soane et al.	204 180.1	2/28/90
	27.	4,675,300	06/23/87	Zare et al.	436 172	9/18/85
	28.	5,632,876	05/27/97	Zanzucchi et al.	204 600	6/6/95
	29.	5,880,071	03/09/99	Parce et al.	204 453	12/6/96
	30.	5,140,161	08/18/92	Hillman et al.	250 341	7/23/91

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	31.	5,681,484	10/28/97	Zanzucchi et al.	216 2	5/31/95
	32.	5,486,335	01/23/96	Wilding et al.	422 55	4/24/95
	33.	5,571,410	11/05/96	Swedberg et al.	210 198.2	6/7/95
	34.	5,500,071	03/19/96	Kaltenbach et al.	156 272.8	10/19/94
	35.	5,869,004	02/09/99	Parce et al.	422 100	6/9/97
	36.	5,580,523	12/03/96	Bard	422 50	4/1/94
	37.	5,498,392	03/12/96	Wilding et al.	422 68.1	9/19/94
	38.	5,646,039	07/08/97	Northrup et al.	435 287.2	6/6/95
	39.	5,639,423	06/17/97	Northrup et al.	122 50	8/31/92
	40.	4,963,498	10/16/90	Hillman et al.	436 69	1/15/88
	41.	5,589,136	12/31/96	Northrup et al.	422 102	6/20/95
	42.	5,904,824	05/18/99	Oh	204 601	3/7/97
	43.	5,757,482	05/26/98	Fuchs et al.	356 246	4/20/95
	44.	5,716,852	02/10/98	Yager et al.	436 172	3/29/96
	45.	5,641,400	06/24/97	Kaltenbach et al.	210 198.2	10/23/95

**FOREIGN PATENT DOCUMENTS**

<u>*EXAMINER INITIALS</u>	<u>DOCUMENT NUMBER</u>	<u>DATE</u>	<u>COUNTRY</u>	<u>CLASS</u>	<u>SUBCLASS</u>	<u>TRANSLATION</u> <u>YES NO</u>
	46.	WO 98/52691	11/26/98	PCT		X
	47.	GB-2264496	09/01/93	United Kingdom		X
	48.	WO 97/38300	10/16/97	PCT		X
	49.	WO 95/33846	12/14/95	PCT		X
	50.	WO 94/05414	03/17/94	PCT		X
	51.	WO 96/04547	02/15/96	PCT		X
	52.	WO 97/02357	01/23/97	PCT		X

**OTHER REFERENCES**

**(INCLUDING AUTHOR, TITLE DATE, PERTINENT PAGES, ETC.)**

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\*EXAMINER  
INITIALS

53. Petty, Jeffrey T., *et al.*, Characterization of DNA Size Determination of Small Fragments by Flow Cytometry, *Anal. Chemistry* **67**, 1755-1761 (1995).
54. W. D. Volkmuth, *et al.*, DNA electrophoresis in microlithographic arrays, *Letters to Nature* Vol. **358**, August 13, 1992, p. 600-602 (1992).
55. Bein, Thomas, Efficient Assays for Combinatorial Methods for the Discovery of Catalysts, *Angew. Chem. Int. Ed.* **38**:3, 323-26 (1999).
56. J. Affholter and F. Arnold, "Engineering a Revolution," *Chemistry in Britain*, April 1999, p.48.
57. F. H. Arnold, *Acct. Chem. Research* **31**, 125-131 (1998).
58. Y. Xia *et al.*, *Angewandte Chemie International Edition* **37**, 550 (1998).
59. H. P. Chou, A. Scherer, C. Spence, S. R. Quake, *Proc. Natl. Acad. Sci. USA* **96**: 11-13 (1998).
60. Hoffmuller, U. & J. Schneider-Mergener, *Angew. Chemie. Int. Ed.* **37**, 3241-3243 (1998).
61. J. P. Nolan, L. A. Sklar, *Nature Biotechnology* **16**, 633 (1998).
62. Jermutus, L., L. A. Ryabova & A. Pluckthun, *Curr. Opin. Biotechnol.* **9**, 534-548 (1998).
63. L. A. Sklar, *Proc. SPIE* **3256**, 144 (1998).
64. M.U. Kopp *et al.*, *Science*, **280**: 1046 (1998)
65. S. Fiedler, *et al.* *Analytical Chemistry* **70**, 1909-1915 (1998).
66. Tawfik, D. and Griffiths, A. *Nat. Biotechnol.* **16**, 652- 656 (1998).
67. Hanes, J. & Pluckthun A. *Proc. Natl. Acad. Sci., USA* **94**, 4937 (1997).
68. Li, P.H. *et al.*, *Analytical Chemistry* **69**, 1564 (1997).
69. Roberts, R. W. & Szostak, J. W. *Proc. Natl. Acad. Sci USA* **94**, 12297-12302 (1997).
70. Stemmer, W. P. C. *Nature*, **370**, 389 (1994).
71. Castro, A., *et al.*, *Anal. Chem.* **85**:849-852 (1993).
72. Harrison, D.J. *et al.*, *Science*, **261**: 895 (1993).
73. Goodwin, P.M., *et al.*, *Nucleic Acids Research* **21**(4):803-806 (1993).
74. Manz *et al.*, *Trends in Analytical Chemistry* **10**: 144-149 (1991)
75. A. Ashkin, J. M. Dziedzic, *Science* **235**, 1517 (1987).
76. A. Ashkin, J. M. Dziedzic, *Nature* **330**, 769 (1987).
77. T. N. Buican, M. J. Smyth, H. A. Verissman, *Applied Optics* **26**, 5311 (1987).
78. Krutenat, R.C., Kirk-Othmer Concise Encyclopedia of Chemical Technology, John Wiley & Sons, New York (1985).
79. Angell *et al.*, *Scientific American* **248**:44-55 (1983).
80. Thompson, L.F., "Introduction to Lithography", ACS Symposium Series **219**:1-13, (1983).
81. M. J. Fulwyer, *Science* **156**, 910 (1974).
82. Ballantyne, J.P., *et al.*, *J. Vac. Sci. Technol.* **10**:1094 (1973).

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- 83. M. A. Van Dilla, T. T. Trujillo, P. F. Mullaney, *Science* **163**, 1213 (1969).
- 84. L. A. Kamensky, M. R. Melamed, H. Derman, *Science* **150**, 630 (1965).
- 85. P. J. Crosland-Taylor, *Nature (London)* **171**, 37 (1953).
- 86. A. Moldavan, *Science* **80**, 188 (1934).
- 87. M. R. Melamed, T. Lindmo, M. L. Mendelsohn, *Flow Cytometry and Sorting* (Wiley-Liss Inc., New York City, 1990).

**EXAMINER:** \_\_\_\_\_ **DATE CONSIDERED:** \_\_\_\_\_

**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.